

AMENDMENTS TO THE CLAIMS:

Attached is a listing of claims that will replace all prior versions, and listings, of claims in the application:

What is claimed is:

1. **(Currently amended)** A method of detecting motion in a mobile device, the method comprising the steps of:
 - (a) obtaining ~~the horizontal~~horizontal and vertical numbers of macro blocks of a frame and initializing horizontal and vertical sizes of the macro block;
 - (b) moving a predetermined ~~number~~amount of data in a column of the frame to a predetermined number of block buffers of an internal memory;
 - (c) performing motion detection on the data stored in the block buffers and ~~counting up~~incrementing the vertical number of the macro blocks;
 - (d) ascertaining whether the motion detection is completed on the block buffers in a vertical direction, and if the motion detection is completed on the blocks in the vertical direction, initializing the vertical size of the macro block and ~~counting up~~incrementing the location of the block buffers in a horizontal direction, and moving a predetermined amount of macro block data to a block location making the block buffers form a circular buffer if the motion detection is not completed in the vertical direction; and
 - (e) ascertaining whether the motion detection is completed on the block buffers in a horizontal direction, and if the motion detection is not completed on the blocks in the horizontal direction, the method continues operation at it goes to the step (b).
2. **(Currently Amended)** The method of claim 1, wherein in the step (d), if the motion detection is not completed in the vertical direction, a predetermined amount of macro block data is moved to a block location obtained by ~~% operation~~a modulo division operation.

3. **(Currently Amended)** The method of claim 2, wherein the ~~% operation~~modulo division operation used is used to determine the block location ~~according to a mathematical expression~~ $\{((\text{the vertical number of macro blocks}) + 2) \% 4\}$ is equal to: $\{((\text{the vertical number of macro blocks}) + 2) \bmod 4\}$, if there are three macro blocks.

4. **(Currently amended)** The method of claim 1, wherein when a search range is $[-16, 15]$, the data is arranged in the 48×16 array in the vertical direction, and the data is arranged in the 16×48 array in the horizontal direction so as to pack the data in blocks when moving the data; data, the method further comprises:

~~the % operation is performed to make the buffers form a circular buffer;~~
performing modulo division to form the circular buffer;
~~determining~~ buffer addresses ~~is obtained~~ with remaining values; and
determining similarity according to (i, j) ~~on each block location in the circular buffer;~~ and
determining a sum of absolute difference (SAD) is found to obtain a SAD value.

5. **(Currently amended)** The method of claim 1, wherein when a search range is $[-8, 7]$, the data is arranged in the 32×16 array in the vertical direction, and the data is arranged in the 16×32 array in the horizontal direction so as to pack the data in blocks when moving the data; data, the method further comprises:

~~the % operation is performed performing modulo division to form the buffers~~
performing modulo division to form the buffers
~~form a circular buffer;~~
~~determining~~ buffer addresses ~~is obtained~~ with remaining values; and
determining a similarity according to (i, j) ~~on the circular buffer;~~ and
determining a sum of absolute difference (SAD) is found to obtain a SAD value.

6. **(Currently amended)** The method of claim 1, wherein the motion estimation is performed when a search range is $[-8, 7]$ so as to determine ~~the size~~ a size and an allocation and ~~the allocation of the fixed circular buffer for the search range $[-16, 15]$;~~ a search range $[-16, 15]$.